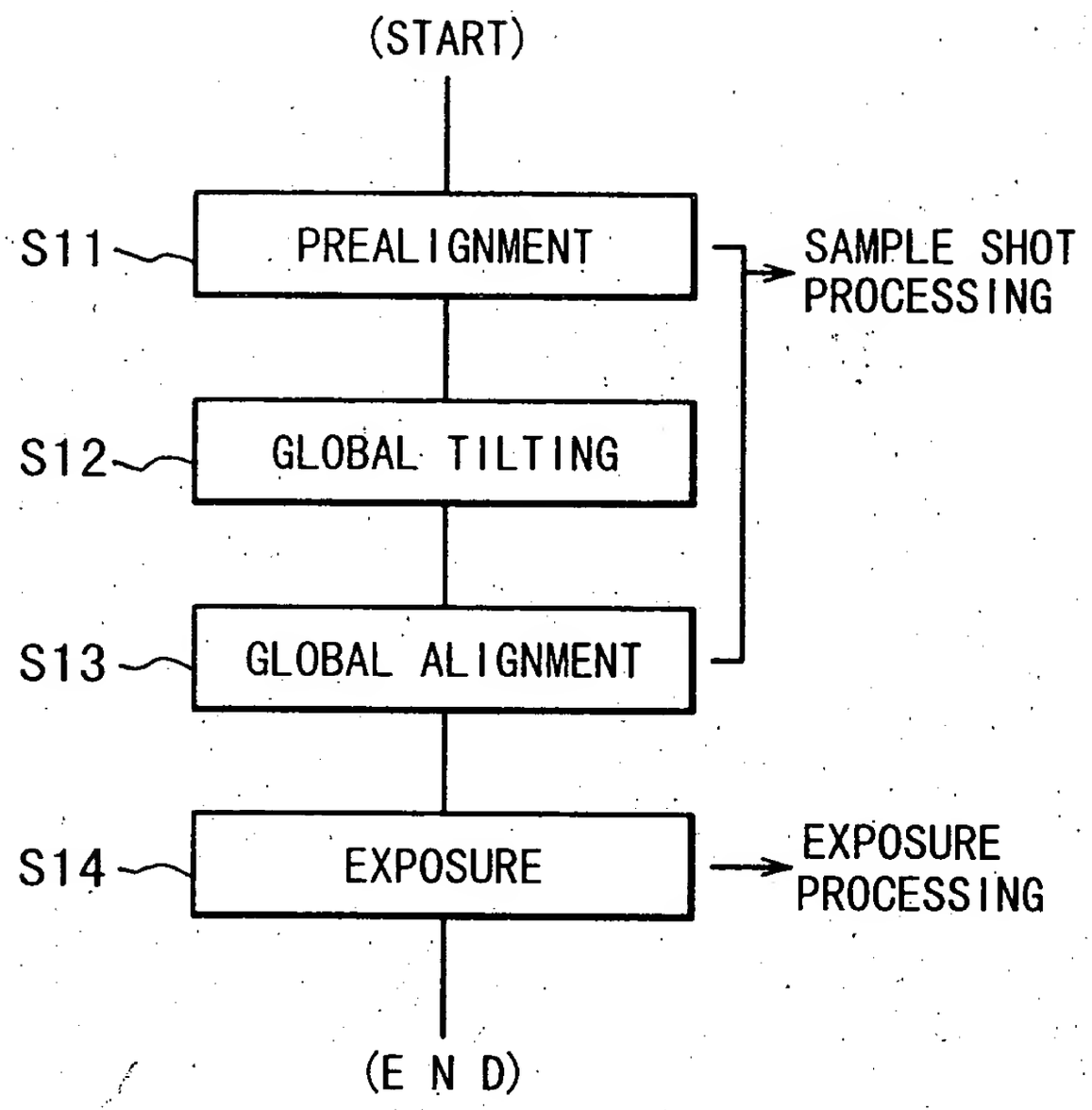
(START)
S11
PREALIGNMENT
SAMPLE SHOT PROCESSING
S12
GLOBAL TILTING
S13
GLOBAL ALIGNMENT
S14
EXPOSURE
EXPOSURE PROCESSING
(E N D)

FIG. 1

Pa, Pb : SAMPLE SHOTS FOR PREALIGNMENT
Ta—Td: SAMPLE SHOTS FOR GLOBAL TILTING
Aa—Ad: SAMPLE SHOTS FOR GLOBAL ALIGNMENT
1—32 : EXPOSURE SHOTS(TO BE EXPOSED IN NUMERICAL ORDER)

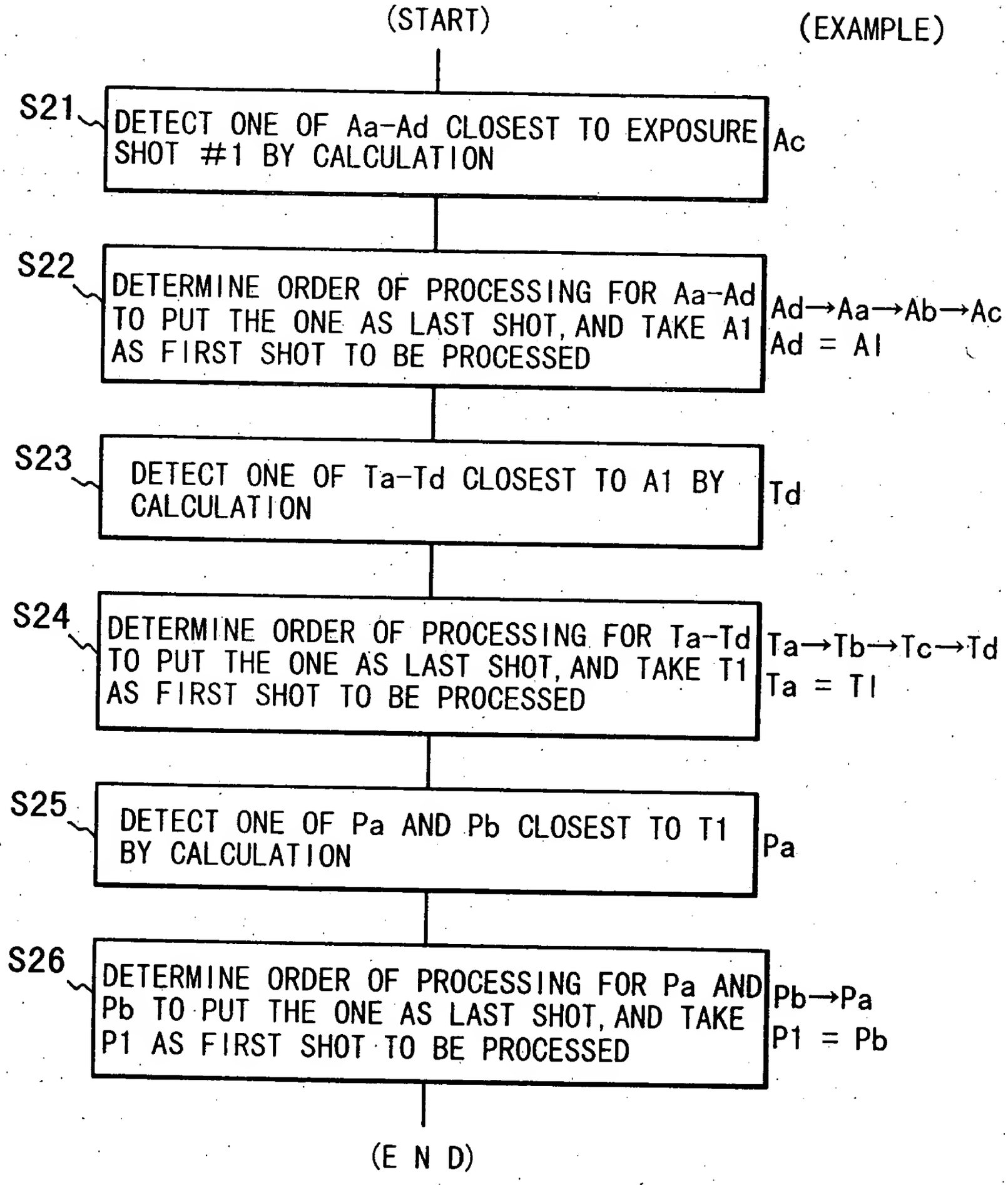

FIG. 2

	29	30	31	32	
	Aa	Ta		Ad	
28	27	26	25	24	23
	Pa			Td	
17	18	19	20	21	22
	Tb			Pb	
16	15	14	13	12	11
	Ab		Tc	Ac	
5	6	7	8	9	10
	4	3	2	1	

FIG. 3

P1, P2 : SAMPLE SHOTS FOR PREALIGNMENT
T1—T4: SAMPLE SHOTS FOR GLOBAL TILTING
A1—A4: SAMPLE SHOTS FOR GLOBAL ALIGNMENT
1-32 : EXPOSURE SHOTS (TO BE EXPOSED IN NUMERICAL ORDER)

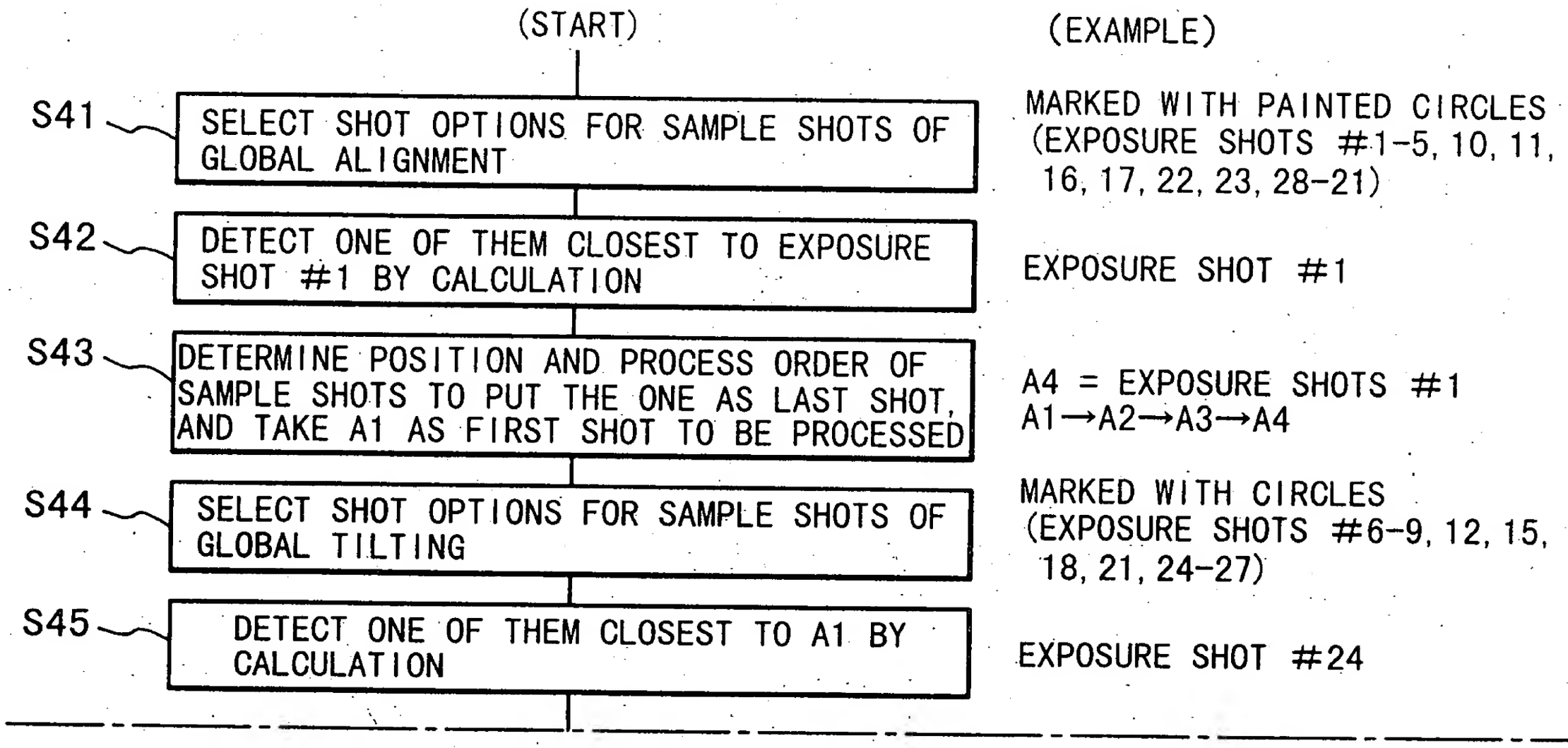

FIG. 4A

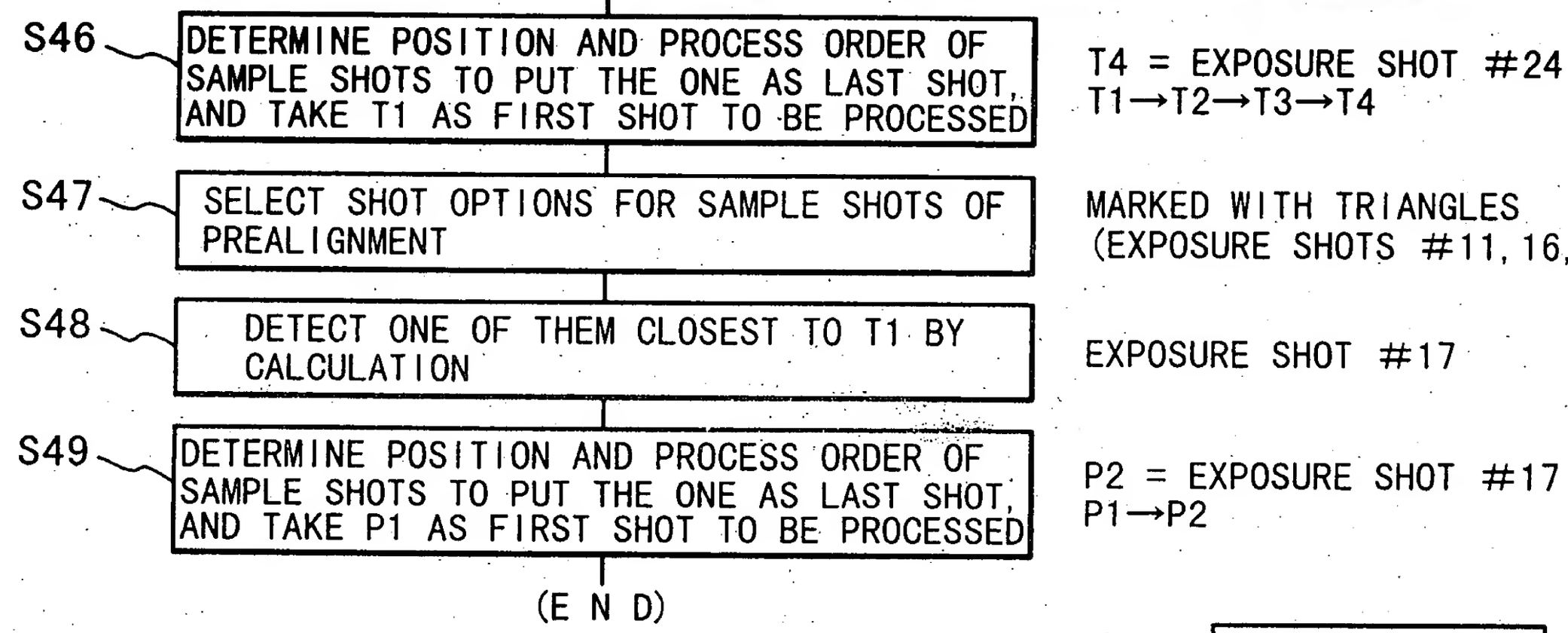
S46
DETERMINE POSITION AND PROCESS ORDER OF SAMPLE SHOTS TO PUT THE ONE AS LAST SHOT, AND TAKE T1 AS FIRST SHOT TO BE PROCESSED
T4 = EXPOSURE SHOT #24
T1→T2→T3→T4
S47
SELECT SHOT OPTIONS FOR SAMPLE SHOTS OF PREALIGNMENT
MARKED WITH TRIANGLES (EXPOSURE SHOTS #11, 16, 17, 22)
S48
DETECT ONE OF THEM CLOSEST TO T1 BY CALCULATION
EXPOSURE SHOT #17
S49
DETERMINE POSITION AND PROCESS ORDER OF SAMPLE SHOTS TO PUT THE ONE AS LAST SHOT, AND TAKE P1 AS FIRST SHOT TO BE PROCESSED
P2 = EXPOSURE SHOT #17
P1→P2
(E N D)

FIG. 4B

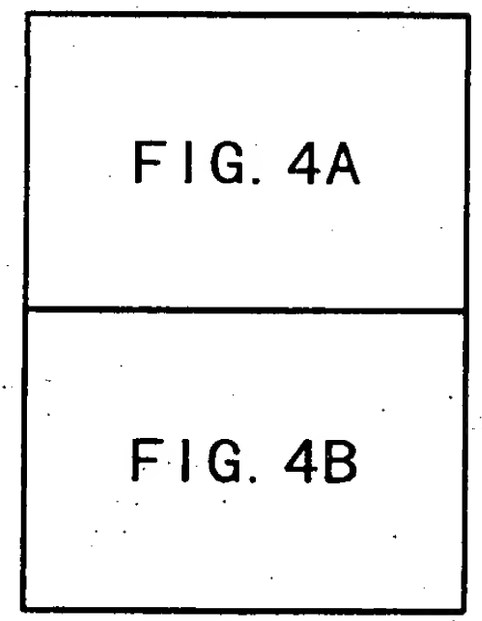
FIG. 4A
FIG. 4B

FIG. 4

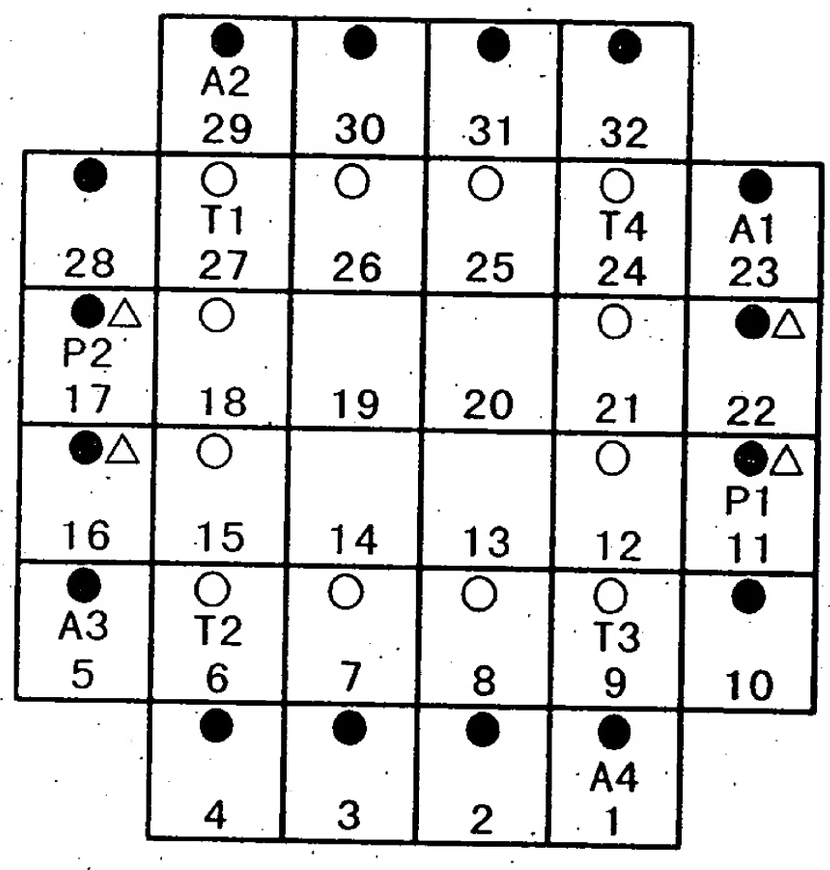
A2
29
30
31
32
28
T1
27
26
25
T4
24
A1
23
P2
17
18
19
20
21
22
16
15
14
13
12
P1
11
A3
5
T2
6
7
8
T3
9
10
4
3
2
A4
1

FIG. 5

Pa, Pb: SAMPLE SHOTS FOR PREALIGNMENT
Ta-Td: SAMPLE SHOTS FOR GLOBAL TILTING
Aa-Ad: SAMPLE SHOTS FOR GLOBAL ALIGNMENT
Ea-Ed: OPTIONS FOR SHOT TO BE PROCESSED FIRST IN EXPOSURE PROCESSING
1-32 : EXPOSURE SHOTS(TO BE EXPOSED IN NUMERICAL ORDER)

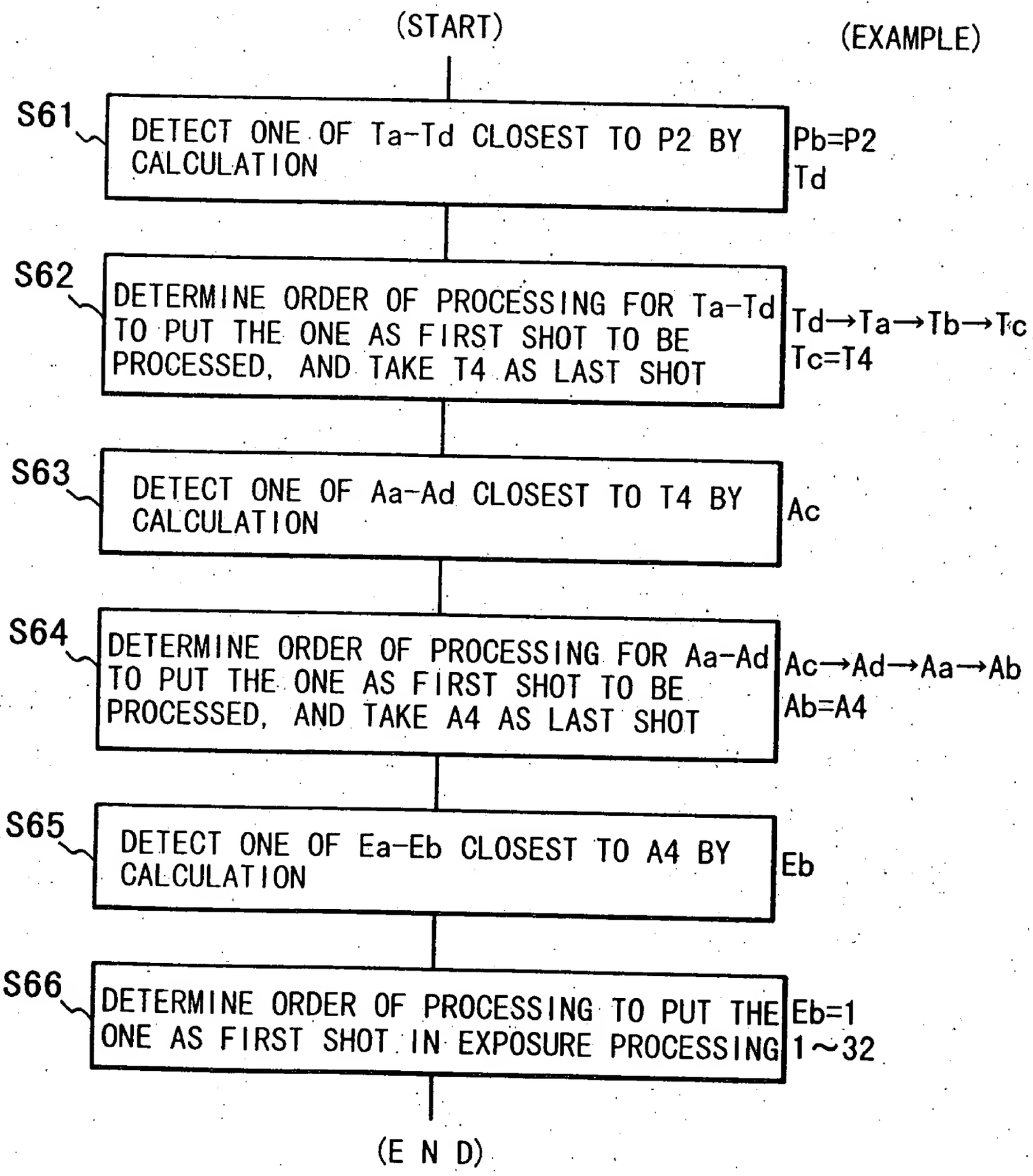

FIG. 6

	Ea 32	31	30	Ed 29	
23	Aa 24	Ta 25	26	Ad 27	28
22	Pa 21	20	19	Td 18	17
11	Tb 12	13	14	Pb 15	16
10	Ab 9	8	Tc 7	Ac 6	5
	Eb 1	2	3	Ec 4	

FIG. 7

START FROM Ea

	1	2	3	4	
10	9	8	7	6	5
11	12	13	14	15	16
22	21	20	19	18	17
23	24	25	26	27	28
	32	31	30	29	

FIG. 8A

START FROM Ed

	4	3	2	1	
5	6	7	8	9	10
16	15	14	13	12	11
17	18	19	20	21	22
28	27	26	25	24	23
	29	30	31	32	

FIG. 8D

START FROM Eb

	32	31	30	29	
23	24	25	26	27	28
22	21	20	19	18	17
11	12	13	14	15	16
10	9	8	7	6	5
	1	2	3	4	

FIG. 8B

START FROM Ec

	29	30	31	32	
28	27	26	25	24	23
17	18	19	20	21	22
16	15	14	13	12	11
5	6	7	8	9	10
	4	3	2	1	

FIG. 8C

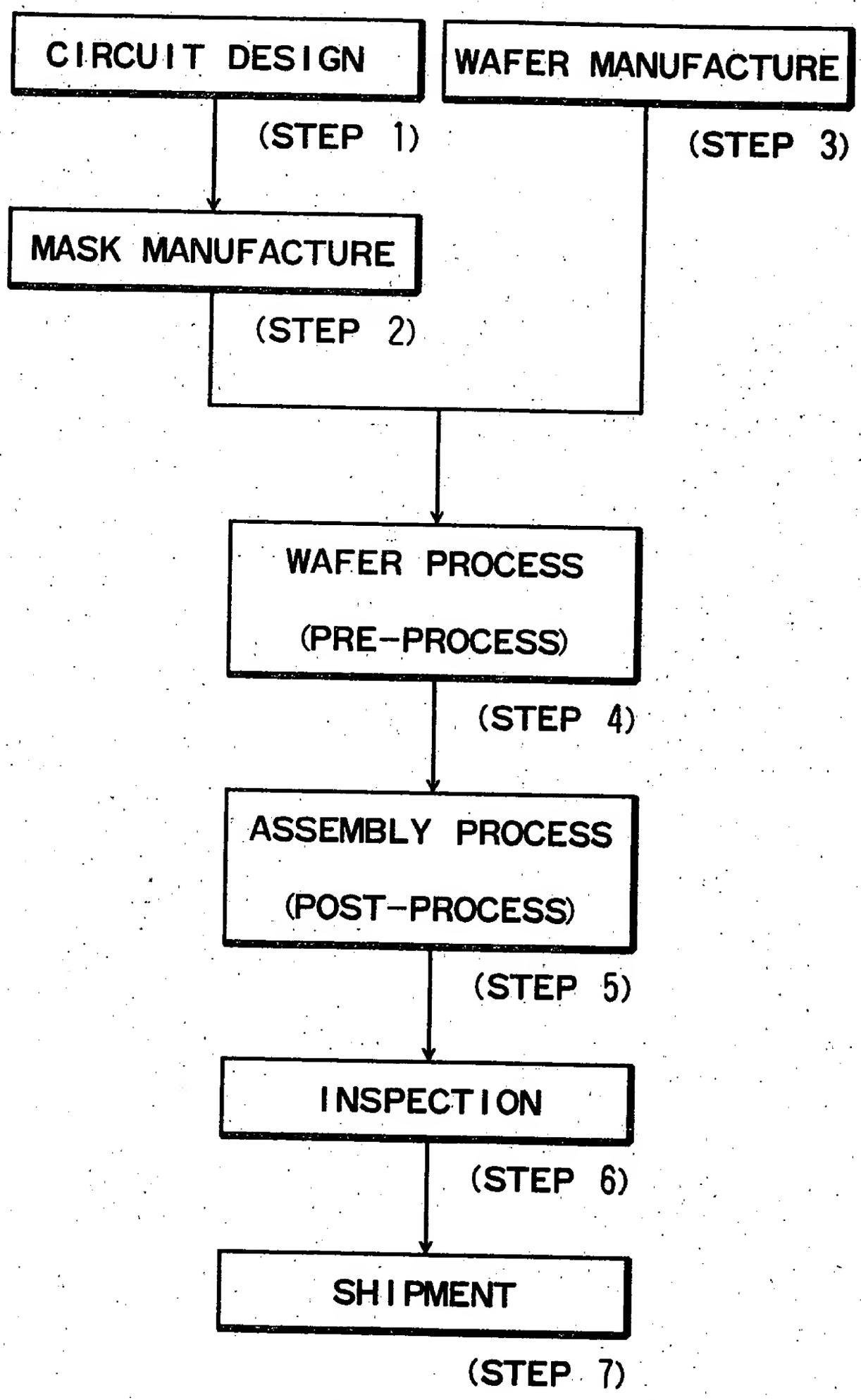
CIRCUIT DESIGN
(STEP 1)
WAFER MANUFACTURE
(STEP 3)
MASK MANUFACTURE
(STEP 2)
WAFER PROCESS
(PRE-PROCESS)
(STEP 4)
ASSEMBLY PROCESS
(POST-PROCESS)
(STEP 5)
INSPECTION
(STEP 6)
SHIPMENT
(STEP 7)

FIG. 9

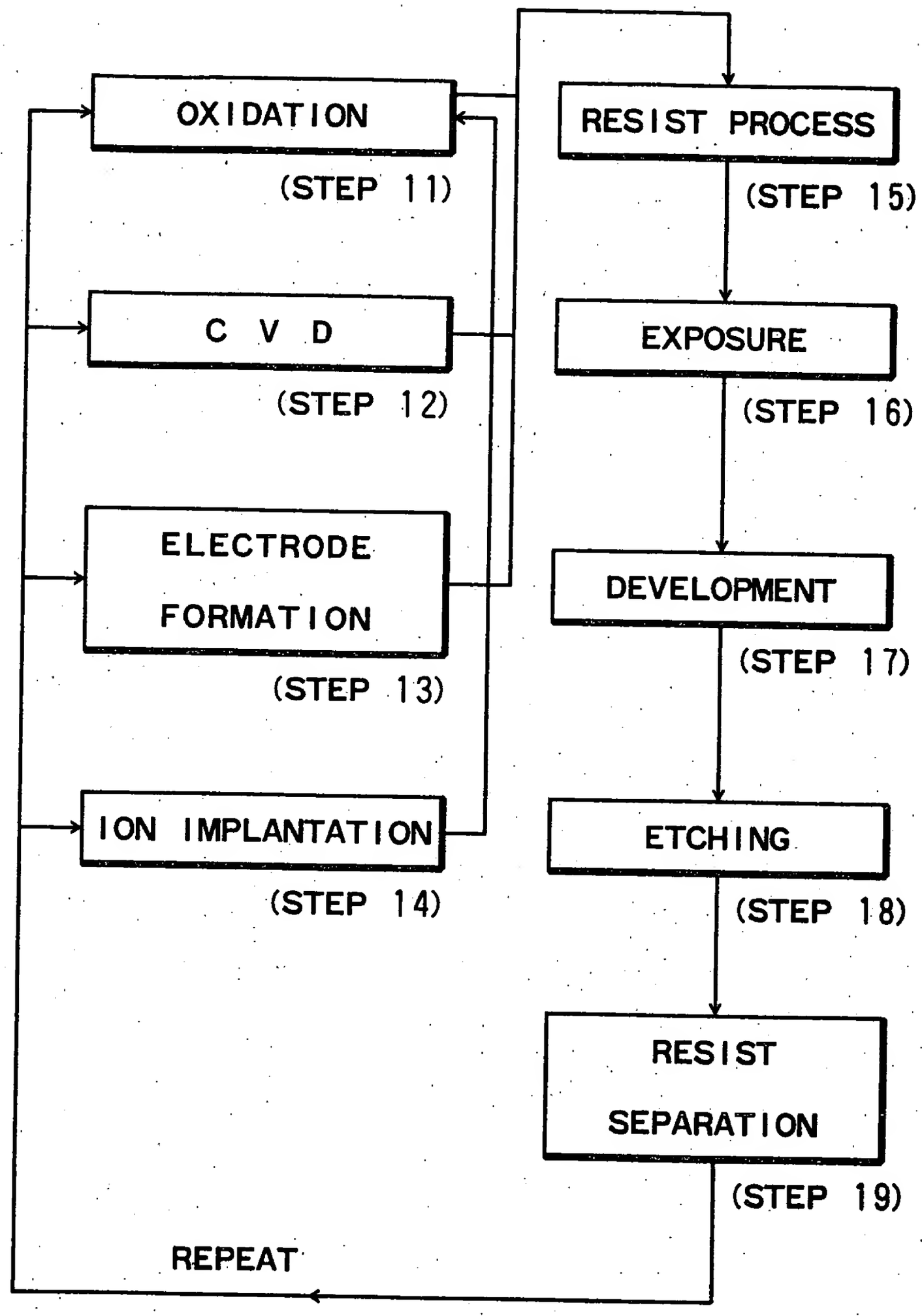
OXIDATION
(STEP 11)
C V D
(STEP 12)
ELECTRODE FORMATION
(STEP 13)
ION IMPLANTATION
(STEP 14)
RESIST PROCESS
(STEP 15)
EXPOSURE
(STEP 16)
DEVELOPMENT
(STEP 17)
ETCHING
(STEP 18)
RESIST SEPARATION
(STEP 19)
REPEAT

FIG. 10